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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,078	07/25/2003	Hyunbae Kim	SILEP001	3508
21912	7590	04/28/2004	EXAMINER	
VAN PELT & YILLP 10050 N. FOOTHILL BLVD #200 CUPERTINO, CA 95014			NGUYEN, LONG T	
			ART UNIT	PAPER NUMBER
			2816	

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. _____

10/628.078

[illegible]

KIM ET AL.

Examiner

Long Nguyen

[illegible]

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply may result in the application being abandoned under ABANDONED (35 USC § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 December 2003.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date: 10/14/03.
- 4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date: _____
 5) ☐ Notice of Informal Patent Application (PTO-152)
 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 10 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 10, the recitation “each of the current devices have peak responses that are time shifted with respect to each other” is indefinite because it is not clear what applicant means by “peak responses that are time shifted with respect to each other”. Clarification and/or appropriate corrections is requested.

With respect to claim 11, this claim is indefinite because it is not clear what is meant by “coupled in parallel by a resistor” and what is meant by “peak responses that are time shifted with respect to each other”. Clarification and/or appropriate corrections is requested.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6, 9 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Sakuragi (USP 5,959,473).

With respect to claims 1-5 and 12, Figure 1 of the Sakuragi reference (also see lines 35-60 of Col. 3) discloses a driver circuit, which includes: a first current device (M11, or M13) for providing a first current (current through M11, or current through M13); a second current device (M12, M14) for providing the second current (current through M12, or current through M14) that is smaller than the first current (because M11 has a larger size than M12, and M13 has a larger size than M14). Note that M11 and M12 are current sources, and M13 and M14 are current sinks. Note that “for driving a line having a state” is intended use and the circuit in Figure 1 of the Sakuragi reference is capable to drive any line at its output.

With respect to claim 6, Figure 1 shows a first switching device (diode D1, or diode D2) to limit the first current (current through M11, or current through M13).

With respect to claim 9, by reading from Figure 1 for the first current device as elements (M11, D1) or elements (M13, D2) then it meets the limitation that the first current device (M11-D1, or M12-D2) includes a plurality of current devices (i.e., M11-D1 includes devices M11 and D1, while M12-D2 includes devices M12 and D2).

5. Claims 1, 3-6, and 8-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Do et al. (USP 5,859,552).

Note that Do et al. discloses in Figure 3 (also see lines 2-10 of Col. 7) a driver circuit, which includes: a first current device (152, 154, 156, 158, 160, 162, 164, 166) for providing a first current; and a second current device (168) for providing a second current that is smaller than the first current (since transistor 168 is a weak transistor, see lines 2-10 of Col. 7). Note that “for driving a line having a state” is intended use and the circuit in Figure 3 of the Do et al. reference is capable to drive any line at its output. Note that a switching device (resistors 174, 176, 178,

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180, 182, 184, 186, 188); and the first current device (152, 154, 156, 158, 160, 162, 164, 166) includes a plurality of current devices (transistors 152, 154, 156, 158, 160, 162, 164, 166) connected in parallel. Note, insofar as understood in claims 11-12 (due to indefinite problems as discussed above), because the transistors (152, 154, 156, 158, 160, 162, 164, 166) are connected as similar as applicant's invention so it also meets the limitations that each of the plurality of current devices are connected in parallel by a resistor so as to have peak responses that are time shifted with respect to each other.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakuragi (USP 5,959,473) in view of Petersen (USP 6,078,169).

With respect to claim 7, Figure 1 of the Sakuragi reference discloses a driver circuit, which includes all the limitations of this claim as discussed above with regard to the 102 rejection of claims 1-6 except that the switching device (diode D1, or diode D2) includes a diode-configured transistor. However, the Petersen reference discloses that a diode-connected transistor has advantages because it can be easily manufactured on the same integrated circuit substrate with the other transistors in the circuit (see lines 4-7 of Col. 4, and lines 24-25 of Col. 5). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to modify the circuit in Figure 1 of the Sakuragi reference to uses diode-connected

transistors for diodes D1 and D2 for the purpose of easily manufactured on the same IC circuit with other transistors in the circuit. Thus, the limitation of claim 7 is met.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directly to Examiner Long Nguyen whose telephone number is (571) 272-1753. The Examiner can normally be reached on Monday to Friday from 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Callahan, can be reached at (571) 272-1740. The fax number for this group is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 24, 2004



Long Nguyen
Primary Examiner
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